



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,887	02/11/2004	Colin Temple	HES 2003-IP-009967U1P1	3325
28857	7590	02/06/2008	EXAMINER FIGUEROA, JOHN J	
CRAIG W. RODDY HALLIBURTON ENERGY SERVICES P.O. BOX 1431 DUNCAN, OK 73536-0440			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 02/06/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/776,887	TEMPLE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John J. Figueroa	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 15 November 2007.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) See Continuation Sheet is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3-19,21-28,30,32-36,38-42,44,56,58-62,64-73,82-100 and 102-111 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 11/30/2007.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

**Continuation of Disposition of Claims:** Claims pending in the application are 1,3-19,21-28,30,32-36,38-42,44,56,58-62,64-73,82-100 and 102-111.

## DETAILED ACTION

### *Response to Amendment*

1. The 35 U.S.C. 102 rejection of **claims 56, 64-70, 72, 82, 83, 95, 102-108 and 110** as anticipated by Nohr (US Pat. Publ. No. 2002/0149656) has been maintained for reasons previously made of record in items 2 and 7 on pages 2 and 3, respectively, of the Office Action mailed August 23, 2007 (hereinafter 'OA').
2. The 35 U.S.C. 102 rejection of **claims 30, 36 and 38-40 only** as anticipated by Nohr (item 2 on page 2 of OA) has been withdrawn in view of Applicant's amendment to the claims in the response to OA filed November 15, 2007 (hereinafter 'Response').
3. The obviousness-type double patenting rejections over U.S. Serial Nos. 11/183,122 and 11/183,113 of record in items 6 and 7 on pages 4 and 5 of OA, respectively, have been withdrawn in view of Applicant's filing of a Terminal Disclaimer with Response.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1796

5. Claims 1, 3, 7, 8, 11-19, 24, 25, 28, 30, 32, 36, 40-42, 56, 58, 62, 66-73, 82, 83, 86, 90, 93-96, 100 and 104-111 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,498,994 to Heilweil (hereinafter 'Heilweil') in view of USPN 3,252,904 to Carpenter (hereinafter 'Carpenter') as further evidenced by USPN 3,617,095 to Lissant (hereinafter 'Lissant')

Examiner notes that the specification in paragraph [0023] on page 7 defines the nanoparticle source as comprising at least a portion of particle sizes greater than individual atoms and less than "bulk solids". Bulk solids particle sizes have been defined to range from "very small" to "40 mesh to "500 mesh" or up to two inches; and from "10 to 1000 microns". See e.g., col. 5, lines 39-44 of Lissant; claim 4 in U.S. Patent Application 2005/0006305 A1.

Heilweil discloses a drilling fluid composition, and a method of drilling a well bore using thereof, said drilling fluid composition comprising, e.g., 1.5% polyvinylpyrrolidone (PVP) (to inhibit shale), solvent, water, clay (weighting agent) and salt. (Abstract; col. 3, lines 1-33; Examples 1 and 5) The salt can be present from about 10% by wt. up to saturation point and can be sodium chloride (known "bridging agent"), calcium chloride, calcium bromide and zinc bromide. (Col. 3, lines 65-67; col. 5, lines 31-36; Example 3) The composition can contain other additives, such as fluid loss control solids. (Col. 5, lines 46-56)

However, Heilweil does not expressly disclose PVP to be crosslinked or its particle size.

Art Unit: 1796

On the other hand, Carpenter teaches adding crosslinked PVP to a fluid composition for use in subterranean formation applications, wherein the fluid composition can comprise chloride salt brine and a particle size of less than about 20 to 60 mesh. (Col. 7, lines 31-60; Table IV; Drawing) The drawing in Carpenter depicts rates of swelling inhibition with respect to particle size. (Col. 7, line 68 to col. 8, line 18)

Carpenter further teaches that the rate of swelling activity (fluid-loss control rheology) of the crosslinked PVP particles in brine/water can be adjusted by particle size to attain a preferred rate of fluid loss control in the subterranean formation application. (Col. 8, lines 26-61)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time that the claimed invention was made to choose a crosslinked PVP (of a preferred particle size) for the PVP component of the drilling fluid in Heilweil's method of drilling a well bore. It would have been obvious to one skilled in the art to incorporate a preferred particle size of a crosslinked PVP in the aqueous drilling fluid composition to be able to manipulate the degree of fluid-loss control and attain a resultant method of drilling that is more efficient as taught by Carpenter.

6. Claims 4-6, 21-23, 33-35, 44, 59-61, 85, 87-89 and 97-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heilweil and Carpenter as applied to the claims above, and further in view of USPN 5,945,387 to Chatterji et al. (hereinafter 'Chatterji')

Heilweil and Carpenter were discussed above. Heilweil and Carpenter do not teach the drilling fluid composition to further comprise a styrene-butadiene rubber latex.

However, Chatterji teaches adding a solid filler material to an aqueous fluid composition to be used in a method for a subterranean formation application, wherein said solid filler material can be a rubber latex material to increase density/rigidity and/or provide durability to the fluid composition. (Abstract; col. 2, lines 28-61) The rubber latex material can be present in about 50-80% by weight of composition and can be a synthetic latex formed from emulsion polymerization, such as a styrene/butadiene latex. (Col. 8, line 26 to col. 9, line 37)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time that the claimed invention was made to add a rubber latex (such as a styrene-butadiene latex) to the drilling fluid used in Heilweil and Carpeneter's method of drilling a well bore. It would have been obvious to one skilled in the art to incorporate rubber latex in the fluid composition to attain a more durable/viscous drilling mud that provides a more efficient method of drilling as taught by Chatterji.

#### ***Allowable Subject Matter***

7. Claims 9, 10, 26, 27, 38, 39 and 91, 92 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach the a method of drilling using a fluid composition comprising PVP particles having a particle size of less than about 1000 nanometers.

### ***Response to Arguments***

#### **The Obviousness-Type Double Patenting Rejections (item 4 of OA)**

9. Applicant's arguments in Response regarding the captioned obviousness-type double patenting rejection have been considered but have become moot due to the withdrawal of this rejection in view of the filing of a terminal Disclaimer with Response.

#### **The 35 U.S.C. 102 Rejection over Nohr (item 2 of OA)**

10. Applicant's arguments filed regarding the 35 U.S.C. 102 rejection of claims 56, 64-70, 72, 82, 83, 95, 102-108 and 110 as anticipated by Nohr have been fully considered but deemed unpersuasive

Applicant's principal argument is that the claims have been amended to require the fluid concentration to contain a bridging agent. However, Nohr discloses in paragraph [0024] on page 3 that the nanoparticles can comprise an oxide, such as zinc oxide, which is a well-known bridging agent. (See, e.g., col. 6, lines 19-30 in USPN 5,783,527 to Dobson teaching zinc oxide as conventional bridging agent).

Thus, the instant claims, as amended, remain anticipated by Nohr.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

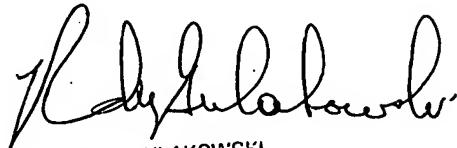
Art Unit: 1796

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (571) 272-8916. The examiner can normally be reached on Monday-Thursday 8:00-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJF/RAG



RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700